

SYSTEMATIC STUDY OF THE ORIENTAL GENUS *VATANA*  
DWORAKOWSKA (HEMIPTERA: CICADELLIDAE:  
TYPHLOCYBINAE: TYPHLOCYBINI)

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*Abstract.*—The *Linnavuoriana* complex in Typhlocybini and the four species of genus *Vatana* Dworakowska are reviewed, and *Vatana* is reported from China for the first time. *Vatana serrata* Huang and Zhang, n. sp., and *V. robusta* Huang and Zhang, n. sp., from China are described and illustrated. A key to species based on males is provided.

*Key Words:* Hemiptera, Cicadellidae, Typhlocybinae, *Vatana*, new species

In China, Typhlocybini contains 22 known genera which can be divided into 4 complexes, the *Typhlocyba* complex, *Linnavuoriana* complex, *Farynala* complex, and *Eupteryx* complex. *Vatana* Dworakowska, 1994, belongs to the *Linnaveuoriana* complex which includes five genera, *Vatana*, *Linnavuoriana* Dlabola, 1958, *Direnaia* Zhang and Huang, 2005, *Amurta* Dworakowska, 1977, and *Agnesiella* Dworakowska, 1970, with common characters distinguished from other complexes by: 1) the body slender; 2) the hind margin of the pygofer with a process or protrusion; 3) the subgenital plate without long macroseta on the base; 3) the paramere with a subapical tooth; and 4) the aedeagus with a well-developed dorsal apodeme and shaft long, with a simple process.

KEY TO MALES OF THE  
*LINNAVUORIANA* COMPLEX

1. Aedeagal shaft with paired laminal processes on dorsal margin . . . . . *Linnavuoriana*

- Aedeagal shaft with an unpaired fingerlike process on ventral margin . . . . . 2
- 2. Aedeagal termination with small hooklike process directed basad . . . . . 3
  - Aedeagal termination bulged, without small hooklike process . . . . . *Amurta*
- 3. Subgenital plate tapering to apex, apical  $\frac{1}{3}$  with numerous long gracile setae . . . *Agnesiella*
  - Subgenital plate broad, with apical  $\frac{1}{3}$  abruptly shrinking at outside, and without gracile setae . . . . . 4
- 4. Aedeagal shaft with process near apex . . . . . *Direnaia*
  - Aedeagal shaft with process near base . . . . . *Vatana*

The genus *Vatana* Dworakowska was proposed for its type species, *V. fusca* Dworakowska, from Nepal and India (Sikkim) and *V. ogromna* (Dworakowska 1977) from Vietnam (transferred from *Agnesiella* Dworakowska by Dworakowska 1994). In this paper, we record *Vatana* and *V. ogromna* from China for the first time. Two new species, *V. serrata* and *V. robusta*, from China are described and illustrated. A

key to species based on males is provided.

*Vatana* Dworakowska, 1994

*Vatana* Dworakowska 1994: 148. Type species: *Vatana fusca* Dworakowska, 1994. Desig. by Dworakowska 1994.

Diagnosis.—Upper body sordid ochre with black spots on vertex and pronotum. Abdomen black with subgenital plate yellowish white. Body robust. Vertex with anterior and hind margins parallel. Forewing narrowing gradually from base to apex and rounded apically, cell m broadened subbasally; clavus with two anal veins. Hindwing with R and M conjunct apically.

Pygofer with a short spinelike process at dorso- and/or ventrocaudal angles; a large group of fine microsetae in center of ventral part and stout microsetae at dorsocaudal angle. Subgenital plate with short fine microsetae subapically, stout microsetae apically; a small sclerotized extension and peglike minute setae on the subapical broadening part. Paramere hooked apically with subapical tooth. Connective small. Aedeagus with well-developed dorsal apodeme; shaft elongate, curved dorsad, with a small medial process apically on anterior surface and moderately long process subbasally on posterior surface. Abdominal apodemes narrow, extending beyond 5th abdominal sternite.

Distribution.—Oriental Region.

KEY TO MALES OF *VATANA*

1. Pygofer with processes at both dorso- and ventrocaudal angles (Figs. 4, 14, 15) . . . . . 2
- Pygofer with a short process at dorsocaudal angle (Figs. 8, 21) . . . . . 3
2. Pygofer process not branched (Fig. 15); aedeagal shaft minutely serrate on dorsal margin (Fig. 18) . . . . . *V. serrata*, n. sp.
- Pygofer process branched (Fig. 4); aedeagal shaft smooth (Fig. 6) . . . . . *V. fusca*
3. Ventrocaudal margin of pygofer smooth (Fig. 8); aedeagal shaft evenly curved dorsad throughout length in lateral view (Fig. 12) . . . . . *V. ogromna*

- Ventrocaudal margin of pygofer with minute teeth (Fig. 21); aedeagal shaft almost perpendicular and sinuate in lateral view (Fig. 24) . . . . . *V. robusta*, n.sp.

*Vatana fusca* Dworakowska, 1994  
(Figs. 1–6)

*Vatana fusca* Dworakowska 1994: 149 (Figs. 855–871).

Distribution.—Nepal, India (Sikkim).

*Vatana ogromna* (Dworakowska, 1977)  
(Figs. 7–12)

*Agnesiella ogromna* Dworakowska 1977: 34 (Figs. 176–186).

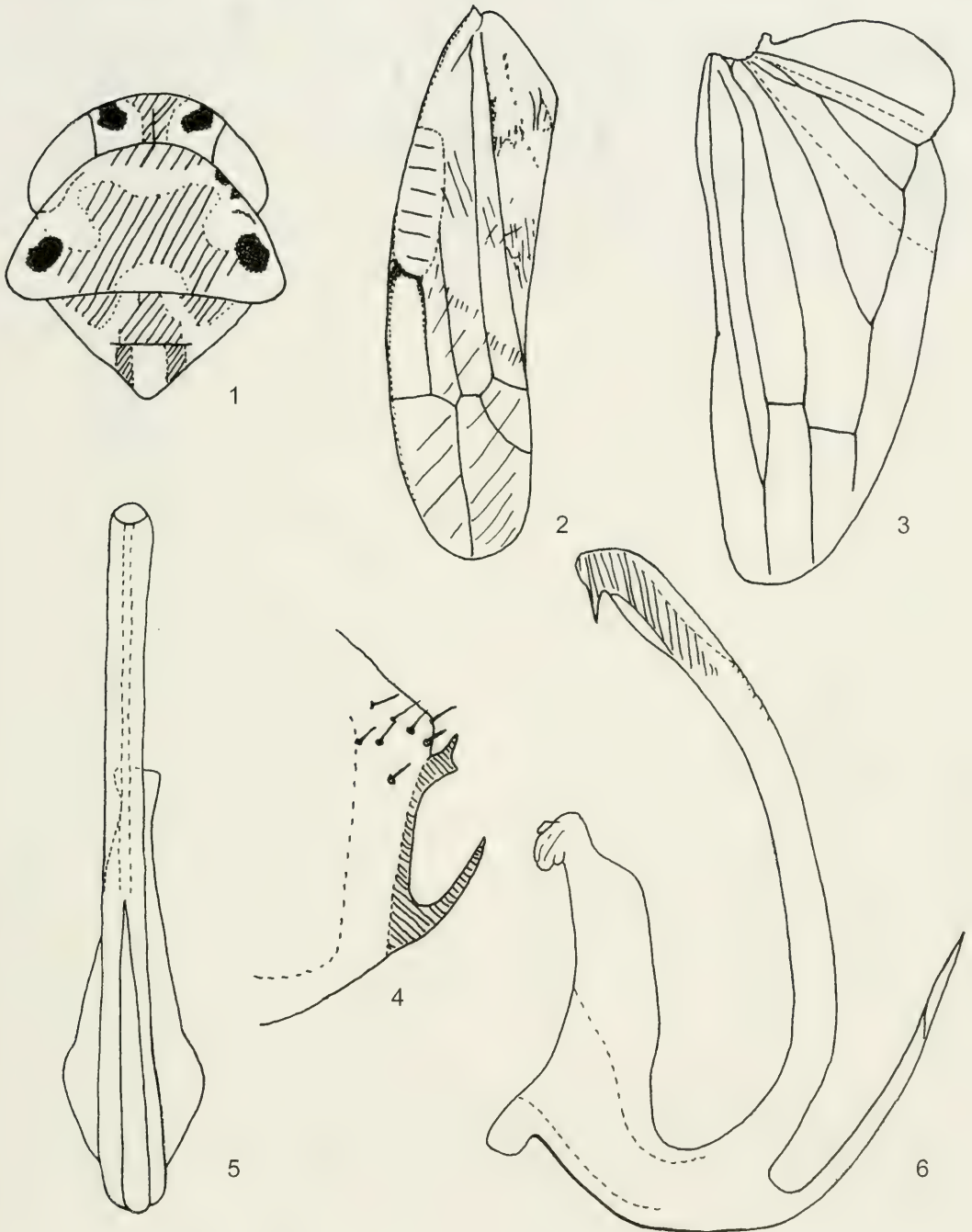
*Vatana ogromna*: Dworakowska 1994: 148.

Material examined.—CHINA: Sichuan Province: 2 ♂, 12 ♀, Mianning (28.5N°, 102.2E°), November 8, 1999, alt. 1,800 m, on *Ahhus*; 3 ♂, Mianning, November 24, 1999, alt. 2,000 m, on *Quercus*, *Pinus*; 8 ♂, 7 ♀, Moxi (29.6N°, 102.2E°), November 5, 1999, alt. 1,600 m, on *Ahhus*; 5 ♂, 8 ♀, Moxi, November 4, 1999, alt. 1,600 m, on *Ahhus*; 1 ♀, Moxi, November 4, 1999, alt. 1,600 m, on tea and *Artemisia* etc.; Yunnan Province: 3 ♀, Dali (28.5N°, 102.2E°), November 12, 1999, alt. 2,400 m, on *Ahhus*; 2 ♂, Tengchong (25.1N°, 98.5E°), November 24, 1999, alt. 2,000 m, on grass; 1 ♂, Tengchong, November 12, 1999, alt. 2,150 m, on *Ahhus*; 2 ♂, 4 ♀, Zixi (25.0N°, 101.5E°), November 10, 1999, alt. 2,400 m, on *Ahhus* and *Rubus*, all collected by I. Dworakowska; 2 ♂, 4 ♀, Dali, Mt. Weibao, November 20, 2001, alt. 2,250 m, at light, Sun Qiang.

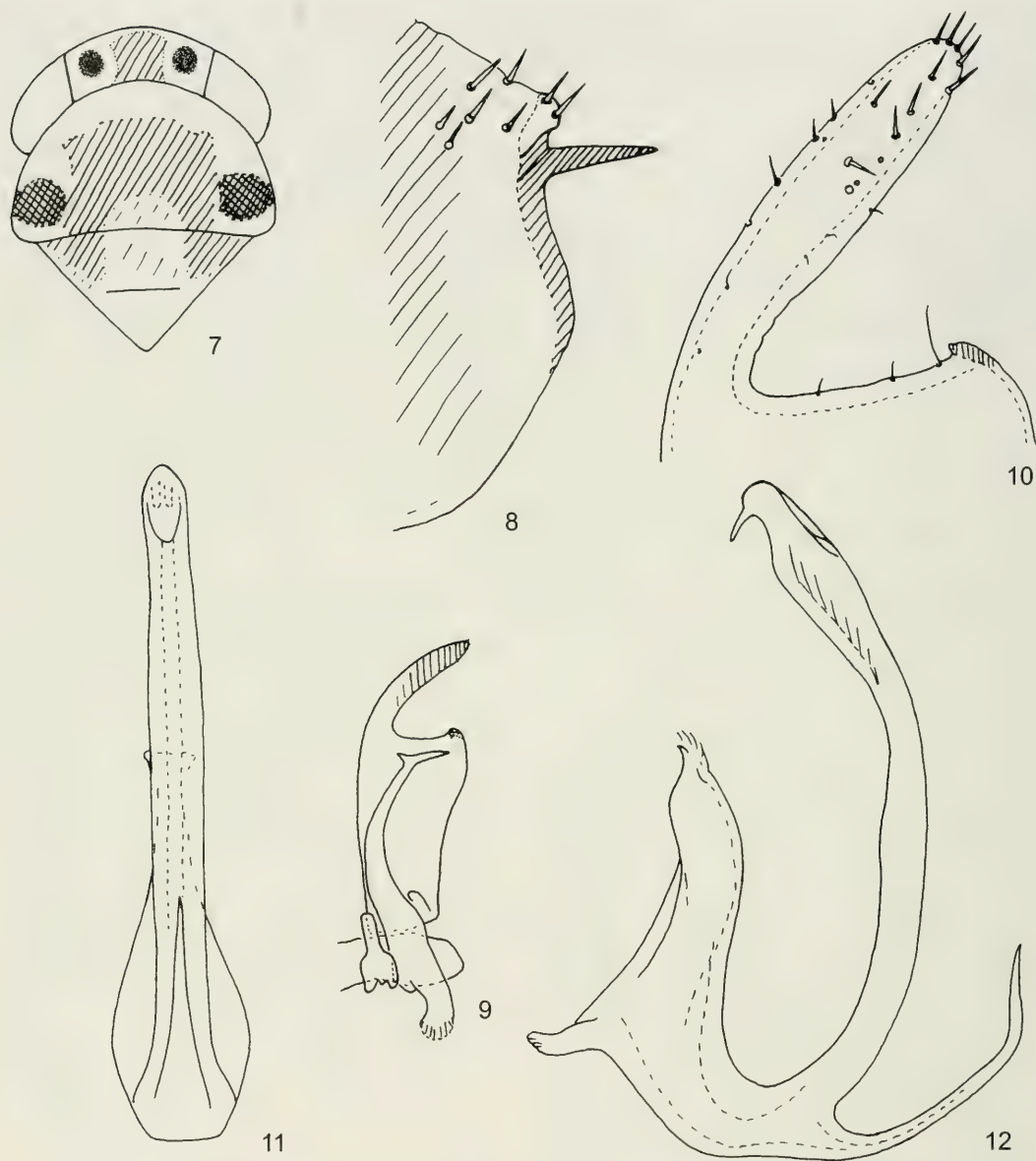
Distribution.—China (Sichuan, Yunnan), Vietnam. This is a new record for China.

*Vatana serrata* Huang and Zhang,  
new species  
(Figs. 13–18)

Diagnosis.—This new species resembles *V. fusca* in the male genitalia but has



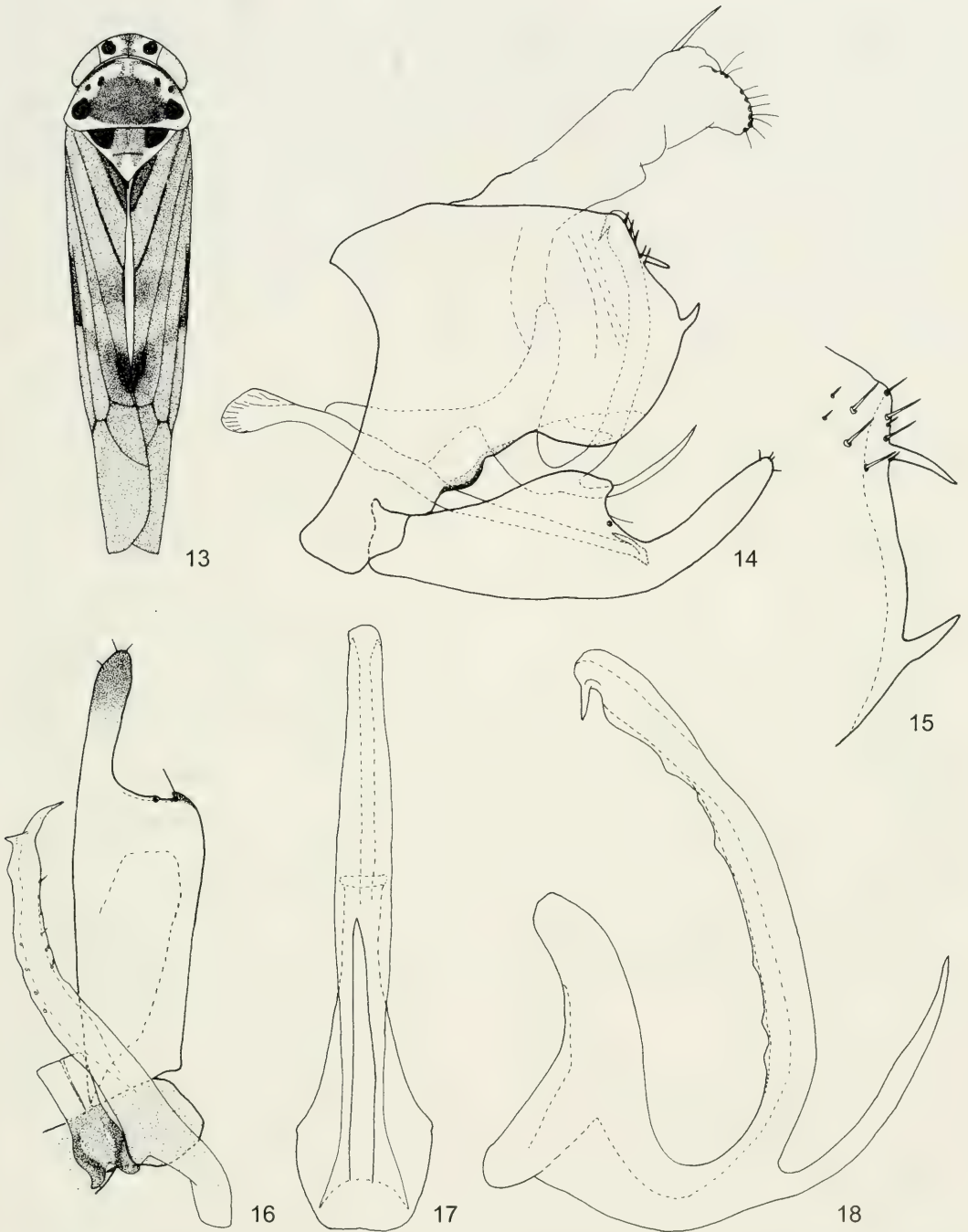
Figs 1-6. *Vatana fusca* (after Dworakowska 1994). 1, Anterior dorsum (crown, pronotum, and scutellum, dorsal view). 2, Forewing. 3, Hindwing. 4, Hind part of ♂ pygofer, lateral view. 5, Aedeagus, posterior view. 6, Aedeagus, lateral view.



Figs 7-12. *Vatana ogromna* (after Dworakowska 1977). 7, Anterior dorsum (crown, pronotum, and scutellum, dorsal view). 8, Hind part of ♂ pygofer, lateral view. 9, Paramere, connective, subgenital plate, and sternite 9, dorsal view. 10, Apical part of subgenital plate. 11, Aedeagus, posterior view. 12, Aedeagus, lateral view.

the two pygofer processes directed towards each other and unbranched (Fig. 15), while *V. fusca* has the two processes parallel and with one branch. (Fig. 4)

Description.—Vertex whitish yellow with medial yellowish-orange patch basally and brownish patch anteriorly. Small spot at each side of vertex and larger spot at each hind angle of prono-



Figs 13–18. *Vatana serrata*, ♂. 13, Habitus, dorsal view. 14, Genital capsule, lateral view. 15, Hind margin of pygofer, lateral view. 16, Paramere, connective, subgenital plate and sternite 9, dorsal view. 17, Aedeagus, posterior view. 18, Aedeagus, lateral view.

tum black, a pair of smaller spots adjacent to eye brownish. Center of pronotum sordid orange ochre. Scutum and scutellum whitish yellow, with basal triangles black, surrounded with brown. Forewing light testaceous, hardly semitransparent; brochosome field and veins reddish orange; distal part of brochosome field, apical part of ScP+RA, R, M, and apex of clavus infuscate; area between apex of clavus and distal end of brochosome field with indistinct light fuscous patches; hind angle of clavus brownish (Fig. 13).

Pygofer with short unbranched acute process at ventro- and dorsocaudal angles (Fig. 15). Paramere slightly swollen basad of subapical tooth (Fig. 16). Aedeagal shaft serrate at dorsal margin, ventral process long and straight (Fig. 18).

Measurements: Body Length: ♂ 4.37 mm; ♀ 4.47 mm.

Type material.—Holotype: ♂, CHINA: Yunnan Province: Lijiang (26.9°N, 100.3°E), Xinzhu Botanical Garden, November 15, 1999, alt. 2,500 m, I. Dworakowska. Paratypes: 5 ♂, 6 ♀, same data as holotype. Deposited in the collections of Entomological Museum, Northwest A&F University, China.

Etymology.—The specific name is derived from the Latin "*serrrat-*", referring to the serrate dorsal margin aedeagal shaft.

***Vatana robusta* Huang and Zhang,  
new species**

(Figs. 19–24)

Diagnosis.—The new species can be distinguished by its more robust form. It is similar to *V. ogromna* in the male genitalia but differs from the latter by: 1) pygofer provided with minute teeth at ventrocaudal margin (Fig. 21); and 2) aedeagal shaft more perpendicular and sinuate, with its ventral process shorter (Fig. 24).

Description.—Vertex whitish yellow with yellowish center and brownish patch on coronal suture. Center and hind margin of pronotum ochraceous; sides of pronotum yellowish, remaining part of pronotum as well as scutum and scutellum ochraceous. A spot at each side of vertex and two pair of spots longitudinally aligned at sides of pronotum black. Forewing light testaceous, hardly semitransparent; brochosome field and veins ochraceous; CuA and anal veins brown; hind margin of clavus, apical part of ScP+RA, R, M, and hind margin of 2nd apical cell infuscate. In female, patch on coronal suture, veins of forewing, and basal triangles of scutellum brownish orange; both ends of brochosome field brown (Fig. 19).

Pygofer with a single pointed process at dorsocaudal angle; ventrocaudal margin with minute teeth (Fig. 21). Aedeagal shaft in lateral view almost perpendicular, sinuate, with a short ventral process at base (Fig. 24).

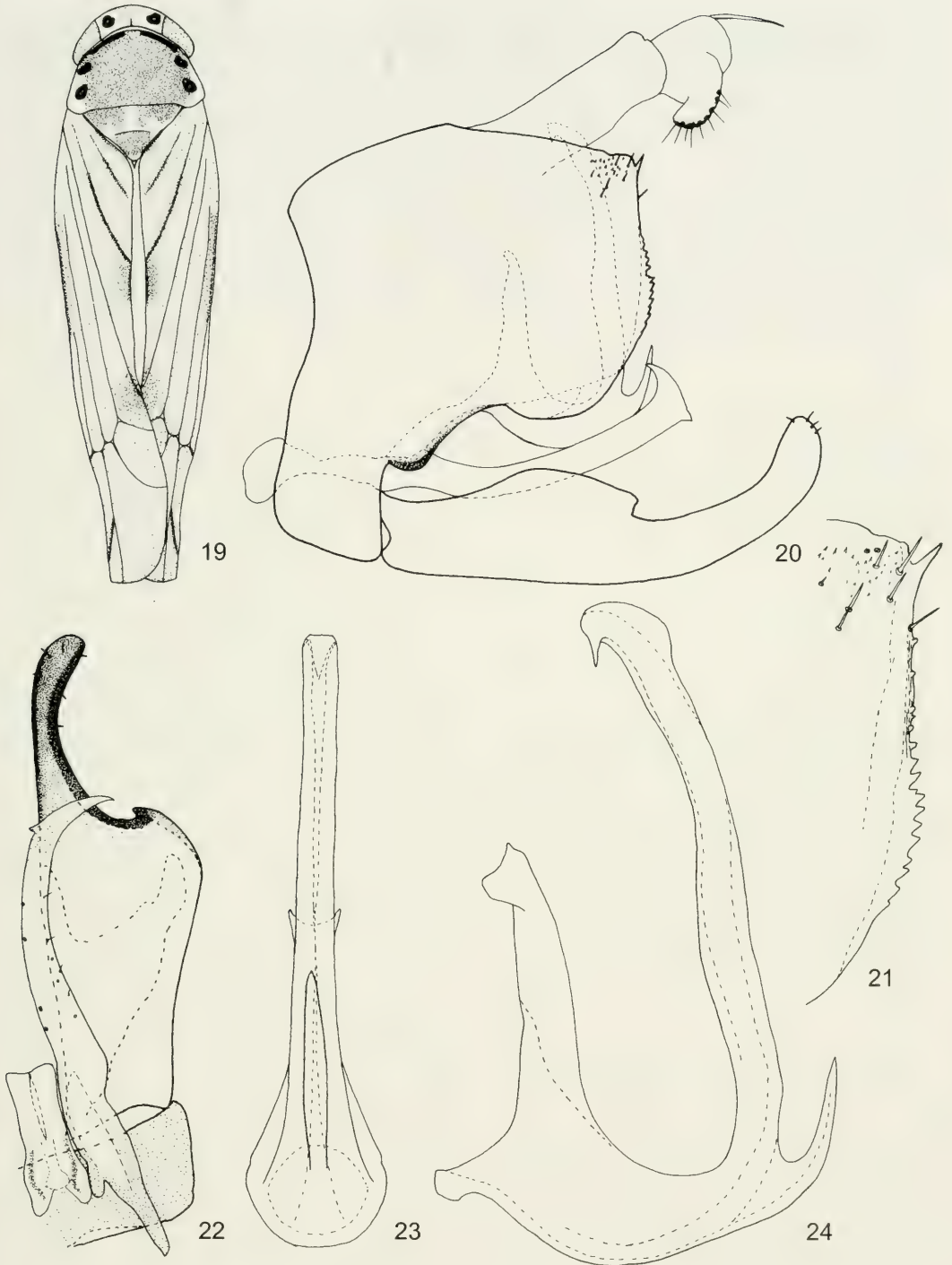
Measurements: Body Length: ♂ 5.01 mm.

Type material.—Holotype: ♂, CHINA: Yunnan Province: Lijiang (26.9°N, 100.3°E), Xinzhu Botanical Garden, November 15, 1999, alt. 2,250 m, on *Alnus*, I. Dworakowska. Deposited in the collections of Entomological Museum, Northwest A&F University, China.

Etymology.—The specific name derived from the Latin "*robust-*", referring to the more robust body than other species in this genus.

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Figs 19–24. *Vatana robusta*, ♂. 19, Habitus, dorsal view. 20, Genital capsule, lateral view. 21, Hind margin of pygofer, lateral view. 22, Paramere, connective, subgenital plate and sternite 9, dorsal view. 23, Aedeagus, posterior view. 24, Aedeagus, lateral view.

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